

Appendix B

DRAFT

ICDF Complex Waste Disposal Verification Data Quality Objectives

Table B-1. ICDF Complex Waste Disposal Verification DQOs.

1: State the Problem	2: Identify the Decision	3: Identify Inputs to the Decision	4: Define the Study Boundaries
<p>Background: The ICDF Complex encompasses three different units:</p> <ul style="list-style-type: none">• The Staging, Storage, Sizing and Treatment Facility (SSSTF)• An Evaporation Pond• A Landfill. <p>The ICDF Complex will treat and dispose of multiple CERCLA remediation wastes generated from within the INEEL boundaries. The wastes include low-level, mixed low-level, hazardous, and limited quantities of TSCA type wastes. Most of the waste will be contaminated soil, but debris is also expected. The ICDF Complex will also be treating and disposing of purge water generated from sampling and drilling of WAG 3 monitoring wells.</p> <p>SSSTF/ICDF Complex Mission: The SSSTF/ICDF Complex is a CERCLA-authorized RCRA/TSCA/DOE 435.1 compliant treatment, storage, and disposal facility.</p> <p>The SSSTF will receive, stage, store, treat, and prepare all INEEL CERCLA wastes (removal, remediation, and IDW) for onsite (ICDF) or offsite disposal for the duration of CERCLA activities at the INEEL. This will include the staging and storage of bulk CERCLA soils, debris, and containerized wastes from all WAGs as directed by DOE. Characterization, transportation, and treatability study confirmation (non-routine) activities are the responsibility of the individual WAG waste generators to meet SSSTF and ICDF WACs.</p> <p>The ICDF is a low-level, hazardous, mixed waste disposal facility (landfill cell[s] and evaporation pond) with an authorized capacity of 510,000 yd³. The ICDF landfill cell(s) will provide waste disposal capacity for CERCLA-generated contaminated bulk soil, debris (rubble, concrete, wood, personal protective equipment, metals), and treated waste generated at the INEEL and meets the agency-approved WAC for the ICDF landfill and evaporation pond. The evaporation pond will provide treatment/disposal capability for CERCLA-generated aqueous wastes. The ICDF can have multiple landfill cells and will be closed with a RCRA/DOE 435.1/TSCA compliant cover.</p> <p>Problem Statement: The SSSTF will provide the capabilities to receive the waste from INEEL WAGs for:</p> <ul style="list-style-type: none">• Direct disposal to the landfill unit or evaporation pond• Temporary storage prior to shipping offsite• Treatment prior to disposal at the landfill, for offsite disposal, or disposal to the evaporation pond. <p>The SSSTF will serve as the waste acceptance and inventory control portal for the ICDF. Pretreatment WAC and post-treatment waste verifications must be determined during the SSSTF and ICDF operations in order to:</p> <ul style="list-style-type: none">• Store the waste• Ensure that the waste disposed in the ICDF meets the WAC. <p>The three WACs will be as follows:</p> <ul style="list-style-type: none">• SSSTF WAC – describes the minimum standards for receipt of waste into SSSTF for treatment of waste prior to disposal at the landfill or evaporation pond• Landfill WAC—describes the standards for nonaqueous waste disposal at the landfill. This WAC applies to treated waste as well as waste that can be accepted for direct disposal.• Evaporation Pond WAC – describes the standards for aqueous waste disposal at the evaporation pond.	<p>Success at meeting the SSSTF WAC will result in the SSSTF receiving the CERCLA wastes for storage, treatment, and packaging , as necessary. Success at meeting the landfill and evaporation pond WACs will result in disposal to the landfill and evaporation pond, respectively.</p>		<p>Specific waste acceptance, storing, treatment, and disposal boundaries are as follows:</p> <ul style="list-style-type: none">• TRU waste may be accepted into the SSSTF for temporary storage.• No PCBs >500 ppm will be accepted.• Waste Profiles must be accepted by ICDF prior to shipment.• Waste must be accompanied by waste profiles.• CERCLA-generated waste as defined by CWID will be accepted.• Waste must meet sizing limits in SSSTF and Landfill WACs.• Waste Generator Services (WGS) will send wastes determined by generator to be outside of WACs directly from generator to offsite disposal. Wastes being sent offsite would utilize the SSSTF, as necessary.• Non-contact handled waste will be treated as a special case.• No significantly contaminated organic wastes (>100X Phase IV LDR) will be accepted.• No free liquids for nonaqueous wastes will be accepted.• Container requirements (TBD).• No reactive waste will be accepted.• No ignitable waste will be accepted.

1: State the Problem	2: Identify the Decision			3: Identify Inputs to the Decision	4: Define the Study Boundaries
	Principal Study Questions	Alternative Actions	Decision Statement		
	PSQ-1: Does waste profile of the waste being received at the SSSTF adequately characterize the waste, i.e., does the non-intrusive visual inspection of waste being received at the SSSTF verify that it is consistent with its waste profile?	A: Proceed to verification steps PSQ-2 or PSQ-3. (A percentage of these shipments will be selected for verification.) B: Return to generator. C: Hold and request clarification of waste profile (assume response by COB).	DS-1: Determine, based on non-intrusive inspection of waste being received, if waste matches its waste profile.	Inputs to the PSQ-1 decision include: Waste profiles: <ul style="list-style-type: none">• Process knowledge• Analytical results• Physical description• Source/generator• Hazardous waste determination• CWID number• Volume/quantity• Container type• Container ID number Results of nonintrusive inspection Radiological field survey (surface counts)	
	PSQ-2: What level of verification is required for disposal of aqueous waste?	A: Dispose of aqueous waste to evaporation pond. B: Dispose of aqueous waste (e.g. secondary waste streams) to offsite disposal.	DS-2: Determine an appropriate level for verification of aqueous waste for disposal.	Inputs to the PSQ-2, decision include: Waste profiles: <ul style="list-style-type: none">• Process knowledge• Analytical results• Physical description• Source/generator• Hazardous waste determination• CWID number• Volume/quantity• Container type• Container ID number• 	
	PSQ-3: What level of verification is required for nonaqueous waste for storage, treatment, or disposal?	A: Store and treat nonaqueous waste at the SSSTF.	DS-3: Determine an appropriate level for verification of nonaqueous waste for storage or treatment.	Inputs to the PSQ-3, , decision include: Waste profiles: <ul style="list-style-type: none">• Process knowledge• Analytical results• Physical description• Source/generator• Hazardous waste determination• CWID number• Volume/quantity• Container type• Container ID number Organics: <ul style="list-style-type: none">• 90% reduction• 10X LDR Stabilization: <ul style="list-style-type: none">• TCLP• 50 psi• Reactivity• pH/Corrosivity• Paint filter test	

1: State the Problem	2: Identify the Decision		3: Identify Inputs to the Decision	4: Define the Study Boundaries
		B: Direct disposal of nonaqueous waste to the landfill.	Inputs to the PSQ-3, , decision include: Waste profiles: <ul style="list-style-type: none">• Process knowledge• Analytical results• Physical description• Source/generator• Hazardous waste determination• CWID number• Volume/quantity• Container type• Container ID number WAG 3 (based on profile, select from the following): <ul style="list-style-type: none">• Radiological constituents• TCLP for WAC COCs• Paint filter test• Reactivity• Ignitability• pH/Corrosivity	
		C: Ship nonaqueous waste offsite for disposal.	Non-WAG 3 (based on profile, select from the following): <ul style="list-style-type: none">• TCLP• 10X LDR in soils for profile organic COCs• Reactivity• Ignitability• pH/Corrosivity• Radiological constituents• Special analytical process as per waste profile Inputs to the PSQ-3. decision include: Waste profiles: <ul style="list-style-type: none">• Process knowledge• Analytical results• Physical description• Source/generator• Hazardous waste determination• CWID number• Volume/quantity• Container type• Container ID Reconciliation of verification results with original waste profile Additional sampling	

5: Develop a Decision Rule	6: Specify Tolerable Limits on Decision Errors	7: Optimize the Design
DR-1: If nonintrusive inspection of the incoming waste indicates that the waste conforms to the profile, then proceed with disposal and treatment as necessary. If not, proceed with Alternative B or C.	Refer to Section 4 of text.	Sample plan design will be optimized for each waste stream.
DR-2: If the verification sampling of aqueous waste indicates that the waste conforms to the profile, then proceed with disposal to the Evaporation Pond. If not, proceed with Alternative B or C of PSQ-1..		
DR-3: If the verification sampling of nonaqueous waste indicates that the waste conforms to the profile, then proceed with disposal and treatment as necessary. If not, then proceed Alternative A or B of PSQ-1.		
<p>Key:</p> <p>CERCLA Comprehensive Environmental Response, Compensation, and Liability Act COB Close of Business CWID CERCLA Waste Inventory Database DOE U.S. Department of Energy DQO Data Quality Objective ICDF INEEL CERCLA Disposal Facility ID Identification (number) IDW Investigation-Derived Waste INEEL Idaho National Engineering and Environmental Laboratory LDR Land Disposal Restriction PCB Polychloronated Biphenyl PSQ Personnel Security Questionnaire RCRA Resource Conservation and Recovery Act SSSTF Staging, Storage, Sizing, and Treatment Facility TBD To Be Determined TCLP Toxicity Characteristic Leaching Procedure TRU Transuranic TSCA Toxic Substances Control Act WAC Waste Acceptance Criteria WAG Waste Area Group WGS Waste Generator Services</p>		